

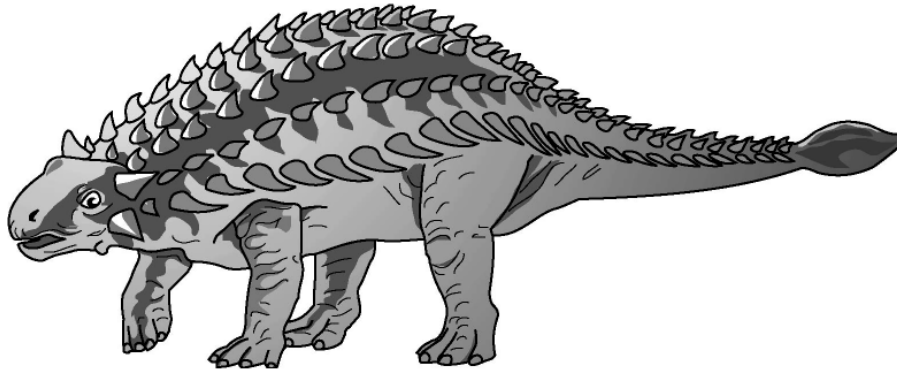


**Science Grade 5  
Scoring Guide for  
Released Item #31  
Ankylosaurus  
Fall 2005**



**Prompt**

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Ankylosaurus was a large armored dinosaur that lived between 65 and 70 million years ago. They had many unique features, including rows of spikes along their entire bodies, large horns on the sides of their heads, and club-like tails. They were approximately 10 m long, with an average body mass of 2,700 kg (as much as a small truck). The top parts of their bodies were covered with thick plates fused into their leathery skin, and they had bony plates around their eyes. The undersides of their bellies were not plated. Scientists believe Ankylosaurus was a plant-eater. Partial skeletons of Ankylosaurus have been found in Montana, USA, and Alberta, Canada. Fossilized tracks that scientists believe were made by Ankylosaurus have also been found in Bolivia, South America.

**ANSWER THE FOLLOWING CONSTRUCTED-RESPONSE ITEM IN YOUR ANSWER FOLDER.**

**Constructed-Response**  
**(3 points)**

The Ankylosaurus had many defense adaptations for survival.

- Identify and record two *different* adaptations that the Ankylosaurus used to protect/defend itself from predators.
- Choose one of these adaptations and explain how it *probably* helped to protect the Ankylosaurus.

**NOTHING WRITTEN IN THIS TEST BOOKLET WILL BE SCORED.**

## Science Rubric for the Ankylosaurus

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### Acceptable Responses:

- Spikes (spines) – to prevent predators from grabbing it
- Spikes (spines) – because they cause injury, discomfort or visual deterrent to the predator
- Horns on their heads – to prevent predators from attacking their heads
- Tails – for swinging at attacking predators
- Body plates/leathery skin/armor – to prevent predators from tearing (biting) into their flesh
- Eye plates – to protect their eyes from poking and/ or injury
- Massive size – to discourage attacks from smaller animals/predators
- Other acceptable responses (e.g., short legs –to keep their unprotected bellies close to the ground where predators couldn't reach them)

### Scoring Guide:

- 3 points** The student correctly identifies two protective adaptations and explains what one of these adaptations was probably used for.
- 2 points** The student correctly identifies two protective adaptations but fails to explain or incorrectly explains one of the adaptations.  
**OR**  
The student correctly identifies one protective adaptation and explains how an adaptation was probably used.
- 1 point** The student correctly identifies one protective adaptation only.  
**OR**  
The student explains how a body part protects.
- 0 points** The student fails to provide any correct information.

### Condition codes for unratable papers (zeroes):

- A – Off Topic  
B – Written in a Language other than English or Illegible  
C – Blank or Refusal to Respond

## Anchor Paper 1 – Score Point 3

A1

(3)

3 points Two different adaptations that the Ankylosaurus used to help defend itself from its predators were that it had rows of spikes along its entire body, and large horns on the sides of their heads. I think that the horns on the Ankylosaurus' head will help them defend themselves because if they got in a fight they could just shove the horns into the other animals.

Anchor Paper 1  
Score Point 3

The student correctly identifies two protective adaptations (*rows of spikes along its entire body, and large horns on the sides of their head*) and explains what one of these adaptations was probably used for (*The horns...will help them to defend themselves because...they could just shove the horns into the other animals*).

## Anchor Paper 2 – Score Point 3

A 2

(3)

3 points

The two things that protected and defended them is spikes and a club like tail. What probably helped them was the leathery skin because it would be hard for a predator to bite them.

Anchor Paper 2  
Score Point 3

The student correctly identifies three protective adaptations (*spikes and a club like tail, the leathery skin*) and explains what one of these adaptations was probably used for (*the leathery skin because it would be hard for a predator to bite them*). The word “bite” specifically indicates that the leathery skin would keep a predator from tearing into the flesh. Since all predators try to eat their prey in some way, the word “bite” is more specific than “eat.”

## Anchor Paper 3 – Score Point 3

A 3

③

3 points Two of the adaptations the Ankylosaurus had to defend and protect itself was the club-like tail and it's rows of spikes along it body. The Club-like tail would have probably been one of its best defends because if a predator came and tried to attack it then it would probably swang it's tail around and injured the predator for it to have time to get away.

Anchor Paper 3  
Score Point 3

The student correctly identifies two protective adaptations (*the club-like tail and it's rows of spikes*) and explains what one of these adaptations was probably used for (*It would probably swong it's tail around and injured the predator*).

## Anchor Paper 4 – Score Point 3

A 4

(3)

3 points

It used its spikes on its back, and its club like tail. I would choose the spikes on its back because if an animal tried to eat it its spikes would hurt the animal's mouth.

**Anchor Paper 4  
Score Point 3**

The student correctly identifies two protective adaptations (*spikes on its back, and its club-like tail*) and explains what one of these adaptations was probably used for (*If an animal tried to eat it its spikes would hurt the animal's mouth*). Since all predators try to eat their prey in some way, the student must and does explain specifically how the spikes would deter predation by causing injury or discomfort to the predator.

## Anchor Paper 5 – Score Point 2

|          |  |     |
|----------|--|-----|
|          |  | A5  |
|          |  | (2) |
| 3 points | Two ways the Ankylosaurus protected itself is with the club tail and the armor plates. The armor plates would help by if it's predator tried to eat him they couldn't cause of the spikes. |     |
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Anchor Paper 5  
Score Point 2

The student correctly identifies two protective adaptations (*the club tail and the armor plates*) and mentions another (*spikes*). The student fails to explain how the tail, the armor or the spikes would deter the predator from trying to eat the ankylosaurus. Since all predators try to eat their prey in some way, the word “eat” is not specific enough to explain that the spikes would cause injury or discomfort to the predator.



## Anchor Paper 6 – Score Point 2

A 6

(2)

3 points

The Ankylosaurus had thick plates on its bodies and they had bony plates around their eyes. The thick plates on its back so the T-rex could not eat them.

Anchor Paper 6  
Score Point 2

The student correctly identifies two protective adaptations (*thick plates on its bodies, bony plates around the eyes*). Although both of the identified adaptations are plates, the student specifies two different locations on the dinosaur's body, making it clear that these are two separate body parts. The student fails to explain why "*the T-rex could not eat them*." Since all predators try to eat their prey in some way, the word "eat" is not specific enough to explain that the defense would be against biting, clawing, or tearing into the flesh.

## Anchor Paper 7 – Score Point 2

A 1

(2)

3 points The ANkylosaurus used thir tails and  
thir SPIKES to protect themselves. it defended  
the ANkylosaurus.

Anchor Paper 7  
Score Point 2

The student correctly identifies two protective adaptations (*thir tails and thir spikes*) but fails to explain how either of these adaptations was used for defense against predators. Although a tail is not an adaptation for defense on most animals, it is acceptable for the student to state only "*thir tails*" rather than "club-like tail," because information in the prompt makes it clear that the tail is specially adapted on the ankylosaurus.

## Anchor Paper 8 – Score Point 1

A 8

①

3 points

IF the Tyrannosaurus Rex came  
after that diposour then he could  
protect himself by his scaly back  
and defend by using his  
club-like tail and ~~some~~ with  
anyone else.

Anchor Paper 8  
Score Point 1

The student correctly identifies one protective adaptation (*his club-like tail*) but does not explain how this adaptation was probably used. The student attempts to give another adaptation (*his scaly back*) that is not acceptable because scales are not the same structure as the thick plates of the ankylosaurus.

## Anchor Paper 9 – Score Point 1

A 9

①

3 points

Two different adaptations that the Ankylosaurus used to protect himself were the spikes on his back and the spikes on his tail.

**Anchor Paper 9**  
**Score Point 1**

The student correctly identifies one protective adaptation (*spikes*) but fails to explain how the spikes would be used for protection. The two locations of spikes (*on his back and...on his tail*) are not two separate adaptations, because there is a continuous row of spikes along the ankylosaurus' body.

## Anchor Paper 10 – Score Point 1

A 10

①

3 points The ANKYLOSaurus would protect  
and defend itself by the plated back

The ANKYLOSaurus is a type of  
dinosaurs

Anchor Paper 10  
Score Point 1

The student correctly identifies one protective adaptation (*the plated back*) but fails to explain how this adaptation was used to protect the ankylosaurus.

## Anchor Paper 11 – Score Point 0

A 11

Ø

3 points Ankylosaurus defended themselves by  
giant thick plates of scales, and his  
or her scales protected them from attacks.

Anchor Paper 11  
Score Point 0

The student fails to provide any correct information. The student attempts to identify an adaptation (*thick plates of scales*) but this is a major misunderstanding, because scales are not the same structure as the thick plates.

## Anchor Paper 12 – Score Point 0

A 12

Ø

3 points

One thing that an Alkasaurus might do protect themself from harm is to hide secretly with it's family. This would protect it from any harm chne to this animal and it's family. Maybe another one might be he would fight for his family if the predator wanted it or it would want to harm the family. So if it won the predator might get scared and run of.

**Anchor Paper 12**  
**Score Point 0**

The student fails to provide any correct information. The student attempts to explain how the ankylosaurus would protect itself, but does not identify any protective adaptation.